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POLICIES, STRATEGIES AND REGULATIONS ON MICROCREDENTIALS AND LIFELONG LEARNING: EUROPEAN AND ESTONIAN FRAMEWORK

Purpose. Analysis of key policies at both the EU and Estonian levels, including regulatory frameworks governing recognition, accreditation, and quality assurance of microcredentials.

Methods. The analysis references EU-wide strategies and Estonia's national policies, ensuring a comprehensive understanding of how microcredentials are integrated and governed.

Results. Micro-credentials—short, competency-based learning units—have emerged as a promising solution for upskilling and reskilling individuals across sectors, have become a pivotal tool in modern education, especially within the European Union (EU) and Estonia, providing flexible, modular learning opportunities that address the evolving needs of individuals and industries. They serve as a bridge between formal education and workforce skill demands, offering a means for continuous professional development and lifelong learning. As policies and regulations evolve, a structured framework for microcredential recognition, accreditation, and quality assurance ensures their portability, reliability, and alignment with existing qualification systems.

Conclusions. Micro-credentials in EU higher education institutions serve as a crucial tool for skill development, career progression, and academic advancement. Their design prioritizes flexibility, industry relevance, and rigorous quality assurance. Future developments will focus on enhancing stackability, improving employer engagement, and expanding digital credentialing systems to facilitate learner mobility and recognition across different sectors.

KEYWORDS: *Education, Microcredit Programs, Strategy, Policy, Management, Non-Formal Education, Mobility, Framework, Lifelong Learning*

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Introduction

European countries have considerable experience in implementing a system of continuing education for adults. Estonia successfully implements lifelong learning programmes that have a legal basis [1, 2] and are implemented in accordance with the curriculum,

which is focused on learning outcomes, and the principles of learning organisation approved by the lifelong learning institution. The learning outcome is the knowledge and skills acquired as a result of learning, the achievement of which can be confirmed and evaluated.

The purpose of this article – analysis of key policies at both the EU and Estonian levels, including regulatory frameworks governing recognition, accreditation, and quality assurance of microcredentials.

The analysis references EU-wide strategies and Estonia's national policies, ensuring a comprehensive understanding of how microcredentials are integrated and governed.

Results and discussion

Policy Documents, Strategies, and Regulations

1. European Union (EU) Policies, Regulations, and Recommendations on Microcredentials and Lifelong Learning Education

The European Union recognizes microcredentials as essential tools for upskilling, re-skilling, and ensuring lifelong learning opportunities. Key EU-level policies emphasize their role in bridging education and employment, ensuring their recognition, stackability, and integration into existing qualifications.

Council Recommendation on a European Approach to Microcredentials [3]:

- Defines microcredentials as records of learning outcomes acquired through small-scale learning experiences.
- Recommends integrating them into national qualification frameworks (NQFs).
- Calls for quality assurance mechanisms to align with the European Standards and Guidelines (ESG).
- Advocates for stackability, enabling learners to combine multiple microcredentials into broader qualifications.
- Emphasizes their role in upskilling and re-skilling workers in response to labor market needs.
- Supports recognition and portability across EU Member States.
- Recommends a common EU framework to ensure quality and transparency.

MICROBOL Project on Common Framework for Micro-Credentials in the European Higher Education Area [4]:

- Connects microcredentials to the Bologna Process, emphasizing their role in higher education, ensuring alignment with European Higher Education Area (EHEA) tools.
- Provides guidance on recognition procedures, quality assurance, and European Credit Transfer and Accumulation System (ECTS) applicability.
- Encourages microcredentials to be issued by higher education institutions (HEIs), vocational education and training (VET) providers, and non-formal education institutions.
- Promotes interoperability of microcredentials among higher education institutions.

ENQA Report on Quality Assurance of Microcredentials [5]:

- Emphasizes the need for alignment with European Standards and Guidelines (ESG).
- Highlights challenges in accreditation and quality assurance, emphasizing the need for transparency and alignment with existing educational structures.
- Suggests stackability, portability, and recognition as critical aspects.

OECD Report on Quality Assurance in Adult Education and Training [6]:

- Discusses mechanisms to ensure the credibility and quality of non-formal education, including microcredentials.
- Identifies best practices in quality assurance, governance, and funding models for lifelong learning.

These policies collectively aim to harmonize microcredential frameworks across the EU, ensuring their recognition, portability, and quality assurance.

2. Microcredential Accreditation and Recognition in the EU

Microcredentials in the European Higher Education Area (EHEA) are regulated through a combination of Bologna Process tools, quality assurance frameworks, and recognition agreements. The goal is to ensure that microcredentials are comparable, transparent, and aligned with established qualifications.

The policy documents outlined above provide the following recommendations regarding micro-credentials through the EQF, Bologna Tools, and the Lisbon Recognition Convention.

European Qualifications Framework (EQF):

- Microcredentials should be classified under EQF levels to facilitate cross-border recognition.
- National authorities are encouraged to integrate microcredentials into their National Qualifications Frameworks (NQFs).

Bologna Process Tools:

- Microcredentials should be ECTS (European Credit Transfer and Accumulation System) compatible, allowing learners to transfer credits between institutions.

- The use of digital certificates is encouraged, ensuring easy verification and alignment with Europass and the Digital Education Action Plan.

Lisbon Recognition Convention (LRC):

- Ensures that learning acquired through microcredentials is recognized by universities, employers, and professional bodies.
- Promotes flexible assessment standards for microcredential recognition.

Digital Education and Recognition:

- The Europass Digital Credentials for Learning initiative enables the secure sharing and authentication of microcredentials across the EU.
- Encourages the adoption of blockchain-based credentialing to enhance trust and transparency.

These frameworks aiming at creating a harmonized system where microcredentials are interoperable, quality-assured, and internationally recognized, enabling seamless mobility for learners and workers.

3. Existing Regulations Governing Microcredential Quality Assurance within EHEA and EU

Microcredentials have emerged as an essential tool for flexible learning pathways, upskilling, and lifelong education. To ensure their credibility and recognition, the European Higher Education Area (EHEA) and the European Union (EU) have established recommendations for the quality assurance mechanisms that align with existing higher education frameworks. These regulations aim to harmonize microcredential standards, ensure transparency, and support cross-border recognition.

Quality Assurance Principles and Regulatory Standards

The quality assurance (QA) of microcredentials is built on three core principles:

- **Transparency** – Clear and standardized information on learning outcomes, credit value, and assessment criteria.
- **Portability** – Recognition across different education systems and labor markets.
- **Stackability** – The ability to combine multiple microcredentials into larger qualifications or degrees.

To implement these principles, several quality assurance frameworks have been recommended to be developed.

Alignment with European Higher Education Standards

• The quality assurance of microcredentials is based on and must adhere to the principles of the **Standards and Guidelines for Quality Assurance in the EHEA (ESG)** [7].

• The ESG ensures that microcredentials are delivered with the same level of academic rigor as formal degree programs.

• Higher education institutions (HEIs) and training providers issuing microcredentials are subject to internal and external quality reviews.

Recognition through Qualification Frameworks

• Formal recognition of micro-credentials is ensured by their integration into National **Qualifications Frameworks (NQFs)**.

• The **European Qualifications Framework (EQF)** provides a common reference system, allowing microcredentials to be compared across countries.

• Many microcredentials are designed to be **ECTS (European Credit Transfer and Accumulation System) compatible**, making them transferable within higher education.

Accreditation Mechanisms

• Universities, vocational institutions, and recognized training providers are required to undergo quality assessment process before offering microcredentials.

• Quality agencies assess whether microcredentials meet learning outcome requirements, industry relevance, and assessment standards.

• European Quality Assurance Register for Higher Education (EQAR [5] registers trustworthy quality assurance agencies in the European Higher Education Area, that comply with the ESG requirements. Often, these quality agencies also oversee the quality of microcredential providers.

Recognition and Cross-Border Portability

For microcredentials to be widely accepted, they must be recognized across borders. The European approach to microcredential recognition is structured around three key frameworks:

Lisbon Recognition Convention (LRC)

- Establishes legal principles for the recognition of microcredentials across EHEA countries.
- Ensures that microcredentials can be evaluated fairly by universities and employers.
- Encourages the use of validation processes for non-formal and informal learning.

Automatic Recognition and Digital Certification

- The EU is promoting **automatic recognition** of microcredentials within higher education institutions.
- **Digital credentialing solutions** (e.g., Europass Digital Credentials) provide secure and verifiable microcredential records.
- **Blockchain technology** is increasingly being explored to enhance the trustworthiness and portability of microcredentials.
- *Employer and Industry Recognition*
- While microcredentials are increasingly accepted in education, **employer recognition varies**.
- Efforts are being made to strengthen **employer engagement** in microcredential quality assurance, ensuring they align with job market needs.
- Microcredentials are being integrated into **corporate training and professional development programs**.

4. Estonian Policies and Regulations on Microcredentials and Lifelong Learning Education

Estonia aligns with EU frameworks while developing national policies that integrate microcredentials into formal education and workforce development. The country has taken steps to institutionalize microcredentials within its education system, recognizing their role in lifelong learning and professional training.

Estonian Education Strategy 2021–2035 [8]:

- Emphasizes modular learning, digitalization, and microcredentials as tools for workforce adaptability.
- Encourages universities, VET institutions, and private training providers to integrate microcredentials into their offerings.
- Highlights employer recognition as a critical factor for success.
- Recognizes microcredentials as part of a flexible education system.
- Emphasizes upskilling and reskilling through modular learning and short-term training programs.
- Supports integration of microcredentials into formal education pathways.

Adult Education Act (Täiskasvanute Kooolituse Seadus) – Effective from 2025:

- Defines microcredentials as small, certified units of learning that meet labor market and societal needs.
- Establishes regulations for minimum (5 ECTS) and maximum (30 ECTS) credits for microcredential programs.

- Requires microcredential providers to be registered and subject to quality assurance evaluations.
- Defines microcredentials as certified learning outcomes acquired through supplementary education.
- Regulates quality assurance for microcredential providers – private providers, universities and vocational institutions.
- Establishes a framework for the formal recognition of microcredentials in lifelong learning.

Estonia's approach ensures that microcredentials are not only recognized but actively contribute to professional development, career mobility, and higher education pathways.

Microcredential Accreditation and Quality Assurance in Estonia [9, 10]

Estonia has implemented multiple mechanisms to ensure the quality and credibility of microcredentials. It's different for private providers (non-formal) and formal institutions.

Quality Assurance Framework for formal Education provider

Microcredentials are aligned with Estonian Qualifications Framework (EKR) levels, ensuring their recognition across industries and educational institutions. If higher education institutions and vocational schools already has the right to offer programs within a specific curriculum group and wishes to introduce a microcredential in that, it only needs to submit an application to Estonian Education Information System (EHIS).

However, if the micro-credential is to be introduced in a new curriculum group, in addition to submitting the application, the institution must undergo a study field quality assessment conducted by Estonian Quality Agency for Education (HAKA).

Quality Assurance Framework for non-formal Continuing Education

All training providers must register in the Estonian Education Information System (EHIS) and comply with established quality standards. Private provider must undergo a study field quality assessment conducted by Estonian Quality Agency for Education (HAKA). A positive evaluation in the curricula group quality assessment is granted if the continuing education institution has demonstrated compliance with the following requirements:

- The resources available for conducting education in the study field are sufficient;

- Adult educators meet the requirements set forth in this law and its implementing regulations;
- The curricula for micro-credential education comply with the standard (separate document)
- The curricula and teaching process adhere to the requirements stipulated in this law and its implementing regulations;
- The learning process is supported and feedback is provided to learners.

Integration of MC with Formal Education in Estonia promotes stackability, allowing learners to combine multiple microcredentials into larger qualifications. The system enables seamless progression between vocational, higher education, and continuing education pathways.

5. Challenges and Future Directions in EU and Estonia

Despite clear regulatory frameworks, there are challenges in implementing a fully harmonized quality assurance system for microcredentials:

- Varied National Implementation – While the EU provides guidelines, member states interpret and apply them differently, leading to inconsistencies in MC quality assurance and recognition.
- Employer Trust and Awareness – Many industries lack understanding of MSs, requiring stronger employer engagement in curriculum development and recognition processes.
- Stackability and Pathways to Degrees – Not all MCs are designed to be stackable, limiting their integration into formal degree programs.
- Digital Credentialing Adoption – While digital solutions enhance transparency and verification, not all institutions have adopted standardized digital credentialing methods.

MC Future Strategies for EU

To address these challenges, the EU and EHEA are focusing on:

- Strengthening Quality Assurance (QA) agencies' oversight of MC providers.
- Expanding employer involvement in microcredential design and accreditation.
- Developing standardized digital credentialing systems to improve portability and trust.
- Encouraging automatic recognition agreements between universities and employers.

MC Future Directions for Estonia.

Estonia is committed to fully integrating MC into its national education and training system.

Strengthening employer recognition:

- Collaboration with industry stakeholders to ensure MC meet labor market needs.
- Expansion of work-based MC programs for industry-specific skills.

Enhancing digital credentialing:

- Estonia is working towards implementing blockchain-based credentialing for secure and verifiable digital certificates.
- Expansion of Europass Digital Credentials in Estonian higher education institutions.

Improving accessibility and participation:

- Microcredentials will be increasingly used in targeted reskilling programs for unemployed or low-skilled individuals.
- Greater emphasis on digital and green skills, aligned with EU's twin transition strategy.

Estonia's approach ensures that microcredentials are formally recognized, quality-assured, and aligned with national and European qualification standards, fostering greater educational flexibility and employability.

Both the EU and Estonia have policies ensuring that microcredentials are recognizable, accredited, and quality-assured. While EU regulations emphasize cross-border mobility and transparency, Estonia has adopted a strong national framework that integrates microcredentials into lifelong learning, vocational training, and higher education.

6. UK example of Micro Credential Courses Design and Development

The UK has created excellent national-level guidance materials for higher education institutions to explain the nature of micro-qualifications in the country and the principles for their development.

Micro-credentials (MCs) in the UK are designed to provide flexible, short-term learning opportunities tailored to industry and employer needs. They enable lifelong learning, upskilling, and reskilling, often catering to professionals seeking to enhance their skills or pivot careers. UK higher education institutions (HEIs) offer MCs as standalone, credit-bearing courses that can contribute towards formal qualifications.

• **Employment Relevance:** MCs are developed in collaboration with industry partners and professional bodies to ensure alignment with workforce demands.

• **Lifelong Learning:** They provide alternative entry pathways into higher education and allow learners to accumulate and transfer credits towards larger qualifications.

• **Flexible Learning Modes:** MCs are delivered through various formats, including online, blended, and in-person instruction, supporting diverse learner needs.

Admission and Access, Recognition of Prior Learning

UK HEIs ensure that MCs are accessible to a wide range of learners, including those without traditional academic qualifications. Recognition of Prior Learning (RPL) plays a key role in admission policies.

• **Flexible Entry Requirements:** While some MCs may require prior knowledge or experience, many are open to learners with relevant professional experience.

• **Recognition of Prior Learning (RPL):**

- Allows learners to use prior knowledge and skills to gain entry into MC courses.
- Supports credit transfer between institutions and towards larger qualifications.
- Enables learners to stack credentials for career progression or academic advancement.

Course Design, Learning and Teaching, Assessment

MC course design in the UK is centered on flexibility, industry collaboration, and academic rigor.

• **Learning Outcomes:** Clearly defined and aligned with national qualification frameworks.

• **Industry Collaboration:** Courses are often co-designed with employers and Professional, Statutory, and Regulatory Bodies (PSRBs) to ensure relevance.

• **Teaching Approaches:**

- Online, blended, and face-to-face instruction.
- Modular formats that allow learners to engage at their own pace.

• **Assessment Methods:**

- Varied approaches, including portfolios, projects, case studies, and exams.
- Focus on competency-based assessment to validate real-world skills.
- Digital solutions used to support secure and verifiable assessments.

Certification

MCs in the UK follow standardized certification practices to enhance recognition and portability.

• **Standardized Certification Elements:**

- Learner details and awarding institution.
- Learning outcomes and assessment results.
- Credit value (CATS/ECTS) and qualification level.
- Industry or PSRB recognition, where applicable.

• **Digital Certification:**

- Institutions are increasingly adopting digital credentialing platforms for secure verification.
- Blockchain technology is explored to improve credential portability.

Quality Management of Micro-Credentials

Ensuring quality and credibility is essential for MCs in UK higher education.

• **Quality Assurance Frameworks:**

- MCs adhere to the UK Quality Code for Higher Education.
- Institutional autonomy allows adaptation to specific needs while maintaining academic standards.

• **Monitoring and Review:**

- Continuous evaluation through student feedback and industry engagement.
- Regular accreditation and validation by regulatory bodies.
- Emphasis on transparency in assessment and certification processes.

Conclusion

Micro-credentials— short, competency-based learning units—have emerged as a promising solution for upskilling and reskilling individuals across sectors. Micro-credentials in EU higher education institutions serve as a crucial tool for skill development, career progression, and academic advancement [11].

Their design prioritizes flexibility, industry relevance, and rigorous quality assurance. Future developments will focus on enhancing stackability, improving employer engagement, and expanding digital credentialing systems to facilitate learner mobility and recognition across different sectors.

Conflict of Interest

The authors declare no conflict of interest regarding the publication of this manuscript. Furthermore, the authors have fully adhered to ethical norms, including avoiding plagiarism, data falsification, and duplicate publication.

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Відкритий університет Естонського університету наук про життя

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ПОЛІТИКА, СТРАТЕГІЇ ТА НОРМАТИВНІ АКТИ ЩОДО МІКРОКРЕДИТІВ ТА НАВЧАННЯ ВПРОДОВЖ ЖИТТЯ: ЄВРОПЕЙСЬКІ ТА ЕСТОНСЬКІ РАМКИ

Мета. Аналіз ключових політик на рівні ЄС та Естонії, включаючи нормативно-правову базу, що регулює визнання, акредитацію та забезпечення якості мікрокредитів.

Методи. Аналіз посилається на загальноєвропейські стратегії та національну політику Естонії, забезпечуючи комплексне розуміння того, як мікрокредитування інтегрується та управляється.

Результати. Мікрокредитівки - короткі навчальні одиниці, що базуються на компетентностях - стали перспективним рішенням для підвищення кваліфікації та перекваліфікації працівників різних секторів. Мікрокредити стали ключовим інструментом сучасної освіти, особливо в Європейському Союзі (ЄС) та Естонії, надаючи гнучкі, модульні можливості навчання, які відповідають потребам окремих осіб та галузей, що постійно змінюються. Вони слугують мостом між формальною освітою та вимогами до навичок робочої сили, пропонуючи засоби для безперервного професійного розвитку та навчання впродовж життя. У міру того, як розвивається політика і регулювання, структурована система визнання, акредитації та забезпечення якості мікрокредитів забезпечує їхню мобільність, надійність і узгодженість з існуючими кваліфікаційними системами.

Висновки. Мікрокредитівки у вищих навчальних закладах ЄС слугують важливим інструментом для розвитку навичок, кар'єрного зростання та академічного просування. При їх розробці пріоритетами є гнучкість, галузева релевантність та суворе забезпечення якості. Майбутні розробки будуть зосереджені на підвищенні сумісності, покращенні залучення роботодавців та розширенні систем цифрової сертифікації для сприяння мобільності та визнанню кваліфікацій у різних галузях.

КЛЮЧОВІ СЛОВА: освіта, мікрокредитні програми, стратегія, політика, управління, неформальна освіта, мобільність, рамки, навчання впродовж життя

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